B. Claim Listing

The following listing of the claims replaces all prior versions and listings of the claims in the application.

1. (Currently Amended) A method for ~~determining~~ controlling a ~~fan~~ speed ~~for~~ of at least one fan used to cool a payload of a host system, the method comprising:
    receiving a first signal indicative of a [[first]] fan speed;
    receiving a second signal indicative of a ~~system~~ temperature of the host system;
    selecting a temperature setpoint based on the [[first]] fan speed using a speed-setpoint droop characteristic, the speed-setpoint droop characteristic comprising a plurality of fan speed values and corresponding temperature setpoint values; and
    computing a [[first]] fan speed output for controlling the speed of the at least one fan based on a comparison of the host system temperature and the selected temperature setpoint.

2. (Cancelled)

3. (Currently Amended) The method of claim [[2]]1, further comprising determining the speed-setpoint droop characteristic prior to selecting the temperature setpoint.

4. (Currently Amended) The method of claim 3, wherein determining the speed-setpoint droop characteristic ~~includes~~ comprises:
    selecting a range of ambient temperature operation of the host system;
    defining an ideal speed-temperature characteristic for the ~~selected~~ range of ambient temperature operation;
    determining a first approximation of the speed-setpoint droop characteristic and a corresponding measured speed-temperature characteristic;
    comparing [[a]] the measured speed-temperature characteristic ~~associated with the speed-setpoint droop characteristic~~ to the ideal speed-temperature characteristic; and

~~iteratively~~ adjusting ~~the speed-temperature characteristic associated with the speed-setpoint droop characteristic by adjusting~~ the <u>first approximation of the</u> speed-setpoint droop characteristic <u>based on the comparison</u> such that the <u>measured</u> speed-temperature characteristic ~~approximates~~ <u>is caused to approximate</u> the ~~defined~~ ideal speed-temperature characteristic.

5. (Currently Amended) A method for determining a speed-setpoint droop characteristic <u>for adjusting a temperature setpoint of a temperature control loop based on fan speed,</u> the <u>method</u> comprising:

selecting a range of ambient temperature operation <u>of a host system, the host system comprising at least one fan controlled by the temperature control loop</u>;

defining an ideal speed-temperature characteristic for the ~~selected~~ range of ambient temperature operation;

determining a first approximation of the speed-setpoint droop characteristic <u>and a corresponding measured speed-temperature characteristic</u>;

comparing [[a]] <u>the measured</u> speed-temperature characteristic ~~associated with the speed-setpoint droop characteristic~~ to the ideal speed-temperature characteristic; and

~~iteratively~~ adjusting ~~the speed-temperature characteristic associated with the speed-setpoint droop characteristic by adjusting~~ the <u>first approximation of the</u> speed-setpoint droop characteristic <u>based on the comparison</u> such that the <u>measured</u> speed-temperature characteristic ~~approximates~~ <u>is caused to approximate</u> the ~~defined~~ ideal speed-temperature characteristic.

6. (Currently Amended) A thermal management system <u>for controlling a temperature within a host system, the thermal management system</u> comprising:

<u>at least one fan control module (FCM), each FCM comprising:</u>

a temperature sensor;

at least one fan; and

a microcontroller in communication with the temperature sensor and the at least one fan, wherein the microcontroller is for:

receiving a first signal indicative of a [[first]] fan speed from the at least one fan;

receiving a second signal indicative of [[a]] the host system temperature from the temperature sensor;

selecting a temperature setpoint based on the [[first]] fan speed using a speed-setpoint droop characteristic, the speed-setpoint droop characteristic comprising a plurality of fan speed values and corresponding temperature setpoint values; and

computing a [[first]] thermal control loop fan speed output based on a comparison of the host system temperature and the selected temperature setpoint.

7. (Cancelled)

8. (Currently Amended) The system of claim [[7]]6, wherein the predetermined speed-setpoint droop characteristic is stored in a memory associated with of the microcontroller.

9. (Currently Amended) The system of claim [[8]]6, further comprising a plurality of FCMs interconnected via a bus, wherein the microcontroller is further for:

receiving via an external bus the bus a third signal having a voltage value associated therewith, the voltage value indicative of a highest requested thermal control loop fan speed of the FCMs; and

computing a second fan speed output based on the third signal.

10. (Currently Amended) The system of claim 9, wherein the microcontroller is further for:

receiving a fourth signal indicative of a manual fan speed; and

computing a third fan speed output based on the manual speed.

11. (Currently Amended) The system of claim 10, wherein the microcontroller is further for generating a speed demand signal based upon one of the first speed output,

~~the second fan speed output, and the third fan speed output~~ <u>thermal control loop fan speed, the highest thermal control loop fan speed of the FCMs, and the manual fan speed</u>.

12. (Original) The system of claim 11, wherein the speed demand signal is a PWM signal having a period and a duty cycle associated therewith.

13. (Currently Amended) The system of claim 12, wherein the microcontroller is further for calculating a voltage value based upon the duty cycle of the speed ~~request~~ <u>demand</u> signal.

14. (Currently Amended) The system of claim [[13]]<u>12</u>, further comprising:

a PWM fan drive for receiving the speed demand signal and generating a power output signal in response thereto, wherein the power output signal is transmitted to the at least one fan~~; and~~

~~a PWM filter for generating a scaled filtered speed demand signal, the PWM filter including a diode gate circuit for gating the scaled filtered speed demand signal onto the external bus.~~